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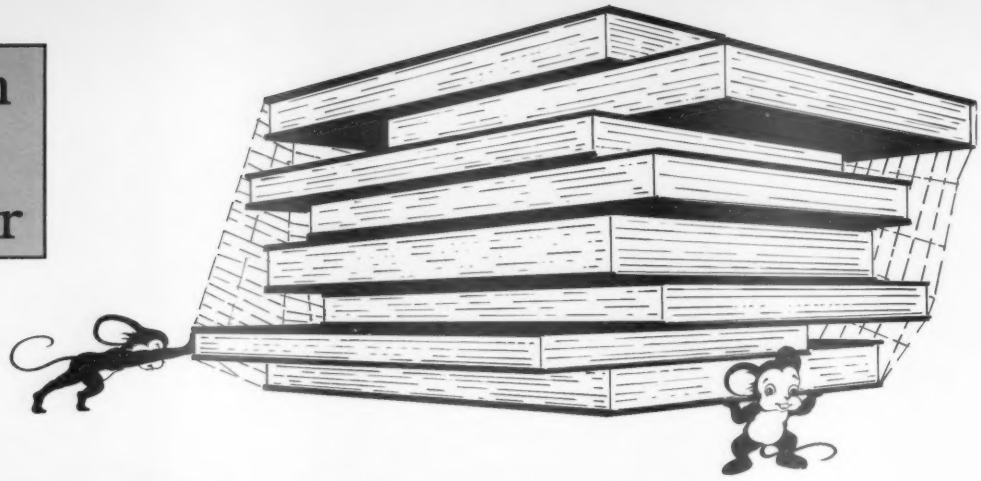
December 1991

approach

The Naval Aviation Safety Review

From the Editor



We Don't Need NATOPS

NATOPS is a useless, outdated, and overrated program. It's useless because almost nobody ever fails a NATOPS test or a check ride. It's outdated because the aircraft, carriers and aviators are better now than when NATOPS began. It's overrated because we aren't getting any safer. We've hit a plateau. The mishap rate has hovered around 3.00 for the last seven years.

Things may not be quite that bad, but there is no denying NATOPS has lost its vitality. A once-effective program has become almost dormant. Unfortunately, the dramatic successes in the first few years of NATOPS cannot be reproduced. We simply destroy fewer aircraft now than we did in 1956. (A fact attributed to the NATOPS program) What can be done to return NATOPS to its preeminent past?

More than half of the class A mishaps are due to aircrew-error, that is where the new focus should be. Airplanes can fly from point A to point B with almost no instruments or additional systems beyond wings, controls and something to push, pull, or drag them through the air. Yet airplanes with all the magic that modern technology can field are regularly flown into each other, the dirt, or the ramp.

The answers needed to reduce the rate of aircrew-error mishaps are out there. Aircrew coordination training, improved cockpit designs (human engineering), and new aircraft are just a few of the possibilities. But the most important of answer lies within the individual aviator.

Training in the fleet must be formalized and standardized, more like it was in the training command. OK, all you fleet lieutenants, get back in your chairs. I hate flying with the safety nazi as much the next guy but that's what it takes to make a professional. NATOPS tests and check rides should be realistic. They should not be filled with max trivia that only the book geeks know. The test must be tests, not informal gouge sessions. Check rides need to be rigorous and the opportunity to fail must be evident. Failure shouldn't end careers but it should flag aviators whose priorities may be mixed up. They must be used to help focus each aviator on the business of flying.

These ideas are based on what I've seen and heard in the fleet, on reading the stories you send *Approach*, and on the mishap reports I see every day. Nevertheless, I don't have all the answers or even all the questions. If you have a different opinion, idea, or complaint, put it on paper and send it in. Tell it like it is, not the way you think your chain of command might want it.

By Lt. Steve Halsted

approach

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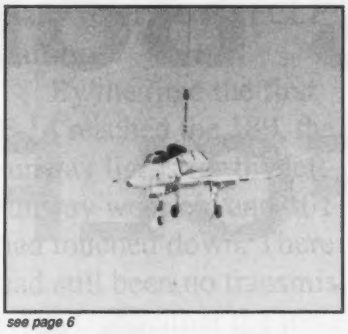
A C-2A Greyhound of VRC-40 recovers on board USS Theodore Roosevelt (CVN-71). (PH2 Michael Parsons)



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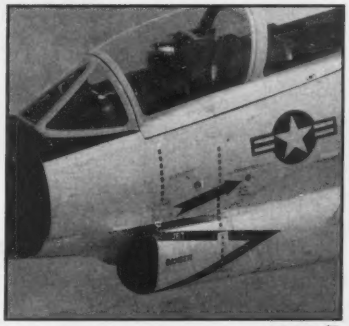

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Attention *Approach* contributors: When writing articles for *Approach*, please use the actual name for ships and bases. Although we have all used euphemisms – NAS Northwest or USS Boat – for a long time, we feel that everyone usually knows what base or ship the author is talking about, anyway. If using the actual name is too sensitive for a specific story, we will fall back to a generic substitute.

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RAdm. J.H. Finney, Commander, Naval Safety Center
Capt. W.J. Mooberry, Chief of Staff
Col. W.W. Scheffler, USMC, Director, Aviation Safety Programs
Cdr. John D. Reid, Head, Media and Educational Support
Lt. Steve Halsted, Editor
Peter Mersky, Asst. Editor
Frank L. Smith, Acting Art Director

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Let's Liven Up This Boring FCLP With a Midair

By LCdr. Ross Dickerson

The pilot was working hard turning fair passes into OKs...

The pilot and RIO briefed a night FCLP hop from Miramar. Both aircrew members were experienced, with tours as FRS instructors. They launched and entered a five-plane pattern. By the fifth pass, both aircrewmen had settled into a normal FCLP routine. The pilot was working hard turning fair passes into OKs, while the RIO fought the boredom by scribbling down each pass and marveling at how a good pattern should be flown.

On the sixth pass, two aircraft ahead of them in the pattern called, "Last pass," and switched to the tower for full-stop landings. After the touch-and-go to the carrier box, both the pilot and RIO noticed that the two other F-14s (401 and 402)—now up on tower frequency remained in the low pattern on downwind for the full stop. They assumed that both aircraft would land on the right runway since tower had not used the LSO frequency to tell them to land on the left runway, which was normally reserved for FCLP traffic.

By the time the first F-14 reached the 180, the runway lights for the left runway were on, and 401 had touched down. There had still been no transmissions from either the tower or the LSO about the left runway's status. As 402 was approaching the 45 from a deep 90, it seemed to be heading for a full stop on the right runway.

The first crew now assumed that 402 was going to the right and that FCLPs would continue without interruption. At the 90, the RIO began to feel uncomfortable about 402's position. He said nothing, however, because he assumed that his pilot was aware of the situation.

By the time the first F-14 reached the 45, the RIO finally asked the pilot if he saw 402, which was now on final and disappearing from view under their right wing. 402 did not seem to be lined up on the right runway.

Still concentrating on getting a good start, the pilot said, "I think he is going to the right."

"No," the RIO replied, "I think he is underneath us going to the left."

The pilot immediately responded with a wing dip and belly check. Both aircrew felt the cold chill of surprise to find 402 only 100 feet below them. The pilot quickly leveled his wings, added power and waved off.

During the thorough debrief with paddles and tower, the crew stressed the need for FCLP aircraft to know about other pilot's intentions. Communication on tower frequency is not enough. The pilot and RIO noted that because they were so senior a crew, they had allowed this situation to get much further than it should have. The RIO assumed his pilot was completely aware of the developing mishap while the pilot relied on his backseater to watch out for and call out other traffic. ◄

LCdr. Dickerson flies the F-14B with VF-24.

Holy Cow! *I've Just Ejected!*

By Lt. James P. Whatley

"This is the last pass. Let's make it our best," my RIO said as we rolled into the groove. I felt good about my ball control as we prepared for our fourth trap, which would complete our refresher training for day CQ. The ball rose to half a cell high, which the burble would soon correct.

"Now that was a good pass," I thought as the hook snagged the 3-wire and we began to decelerate. I felt my concentration loosening. I went to military power and retracted the speed brakes. At about 80 percent of the normal arrested rollout, my self-adulation was interrupted by an abnormal "pop" through the airframe. The Tomcat began accelerating toward the edge of the angle deck.

"The hook tip broke" I told myself. "No problem, we'll fly it away." I checked the airspeed as our nosegear cleared the deck. Eighty knots! Maybe not!

"Eject!" I called as I applied aft stick pressure to minimize our descent. In the same split-second, I saw a flash as the canopy left the aircraft.

Luckily, my RIO had recognized the futility of our situation a second earlier and had initiated ejection as we cleared the angle.

"Thank goodness for command ejection," I thought as I felt the kick of the ejection seat. I saw the horizon a couple of times as I tumbled after separating from the seat.

I immediately thought about my marginal performance in treading water during water survival training in AOCS. I had four or five seconds before I hit the water, and my first priority was to inflate my LPA. I plunged into the water, sinking several feet below the surface. As I watched the surface above me, I wondered if I would sink or float. After a slight hesitation, I popped to the surface.

I was only 50-100 feet from the port side of the carrier. I felt a slight tug behind me; my SEAWARS had not worked as advertised. All the horror stories about aviators being pulled down by their parachute flooded my mind as I groped for my koch fittings. I remembered my training, not realizing that this gouge only applied while airborne in the chute. I was surprised and relieved to finally find the fittings close to their normal position. I quickly released them and searched for the chute's shroud lines. I was happy to find only one around my right arm and I immediately untangled it.

The ship glided past with all its screws stopped, thanks to the skipper and his bridge crew. I heard my RIO and saw him only 50 feet away. Once we had determined we were OK, we talked about what had happened. The SAR helo circled overhead and within 15 minutes, we were back onboard the CV trying on the new summer line of shipboard sleepwear supplied by the friendly medical staff.

It was not the hook tip that had broken, but the purchase cable, which connects the crossdeck pendant to the arresting gear. The fact that the separation had occurred below deck meant that the flailing wire on the flight deck hadn't killed or injured anyone.

Situations that require immediate ejection happen under a variety of circumstances around the ship. During an emergency is not the time to go through a bunch of "what ifs"; they should be part of your brief. We needed to decide to eject in less than two seconds and we were still pushing the edge of the ejection envelope. We need to be constantly going through hypothetical emergencies in the comfort of the ready room.

I have always heard that survival training is easily remembered. I found this was true on the major points like IROK. However, I feel that I should have known my survival equipment better. For instance, if I had become entangled in my shroud lines, could I have found my shroud cutter in time? I can now. How about inflating my survival raft after I hit the water? It's a little easier while still in the chute.

Lt. Whatley is a first-tour F-14 pilot with VF-51.

By Lt. Scott Smith

Getting a Little Low

As we launched from USS *Ranger* (CV-61) at night, we were happy and confident. After all, it was the last period of the war and we had both been on numerous strikes. We had them running.

Our mission was road recce along what we called "The Highway to Hell," the road leading north from Kuwait City. We would use our A-6's AMTI (automatic moving target indicator) radar mode to find vehicles and then drop our 12 Mk-82s in three runs of four.

During our first run, we discovered that the AMTI wasn't working. We had briefed to look for headlights as a backup. Unfortunately, the Iraqis were getting smart and running without lights. However, there was enough moonlight reflecting off the road for my pilot to designate the strip, allowing me to search with my FLIR. This method worked on the first run. We decided to stay with it.

On our second run, we would have a brush with an attack aviator's worst enemy—the ground! Once again, my pilot had looked for trucks. We started a slight dive from 8,000 feet MSL, then had overbanked slightly to designate what appeared to be a target. We had been in a 15-20-degree dive and my pilot had been looking outside for the target while I looked at the FLIR. Who was monitoring our altitude? Absolutely no one.

Call it a sixth sense, or call it training, but something made me look at the altimeter. We were passing through 2,000 feet MSL (1,600 feet AGL).

"Two thousand feet!" I shouted. "Pull up!" He made a 6.5-G pullout and we bottomed out at 500 feet AGL.

A bit shaken, we finished the mission and headed back to the ship. We didn't talk much on the way home.

Finally, my pilot said, "We got a little low that one time."

"Yep," was all I could reply.

We both knew that a breakdown in crew coordination had almost cost us our lives. In combat, we worry about AAA and SAMs. Sometimes we forget about the natural enemy, the ground. Crew coordination is an essential element to the attack mission and it only takes a momentary lapse to kill you. ◄

Lt. Smith is a BN with VA-52. He served TAD with VA-155 as a combat replacement BN.

PHAN Sean Flynn

Pieces of the Puzzle

By Cdr. Mark Danielson

Photos by PH2 Ed Hickey

VC-13 A-4 arrives at Miramar with desired nose-down attitude.

A VC-13 TA-4J crew was participating in a Topgun training exercise over the tactics range near MCAS Yuma when the oil pump failed. The crew diverted to Yuma 40 miles away. En route, the Skyhawk's engine deteriorated, and by the time the aircraft was near the field, the engine completely seized. The crew made a successful dead-stick landing at Yuma. (See "A-4 With Afterburner," *Approach*, June 1988, and the Bravo Zulu, *Approach*, September 1988.)

Salvage efforts took on three aspects. The TA-4's engine was shipped to Pensacola for breakdown and analysis. The aircraft's tail section went to NAS Miramar for repair. The aircraft's forward section remained at the MCAS.

Efforts to ship the remaining section to Miramar were unsuccessful because of the 27.5-foot wingspan. Dismantling the aircraft further would have created more problems and would not have cut the cost effectively.

The alternatives were to find a way to ship the aircraft by air, or rebuild it in Yuma after shipping replacement parts there. Again, the second alternative was not a good choice because it was too hard and too expensive.

The Navy could not provide helolift services but the Nevada Army National Guard, from Reno, Nevada, was more than willing and able to take on the task. They use the A-4 to practice lifts with their CH-54 Skycranes.

Getting all the interested parties to agree on how to do the mission was no easy thing, considering that the aircraft was not in a "normal" configuration. Its canopy, instruments, engine, seats, and tail were gone.

We contacted the engineers at the Naval Aviation Depot in Pensacola for weight and balance figures, CG limits and feasibility. The Commander, Naval Air Reserves in New Orleans, was also asked, via the chain of command, to approve the operation. While that request was in process, the rest of the coordination sequence began.

The Nevada Army National Guard could provide the helo transport services, and the Marines at MCAS Yuma would provide a crash crew to test the lift harness. The air station would also provide billeting and ramp space. NAF El Centro would be a fuel stop, while NAS Miramar would

Aircraft touches down in left spin on nosewheel.

Touchdown complete - aircraft safely on deck.

provide FAA and ATC coordination, a harness to lift the A-4, and security police.

After a month of planning, all the arrangements were waiting final approval and transfer of funds. Final approval came shortly before the Army helo was due to depart Reno. The weather was perfect: clear skies, 85 degrees and calm winds at Miramar. The nice weather was also responsible for turbulence over the mountains and strong winds at Yuma.

Liftoff at Yuma was anything but uneventful. The lightweight A-4 caught the wind and pitched violently straight up and down. Thanks to the Army crew's experience, they decided to hang on to the cargo and see what would happen. The A-4 eventually stabilized in the desired nose-low attitude and the Skycrane was able to get 70 knots of speed, 10 knots above planned cruise. The camera buffs at El Centro were disappointed when the helo bypassed the NAF's fuel stop to avoid problems on another liftoff.

The CH-54 was visible 15 miles away and the A-4 was stable, riding sideways. The CH-54 was over the numbers of the off-duty runway on time, ready to set the A-4 down. As the helo entered the hover, the A-4 began spinning counterclockwise in the rotorwash. This Mexican standoff took several minutes while everyone watched and waited. Since the spinning was obviously not going to stop, the helo crew decided to lower the A-4 slowly and carefully. The A-4's nosewheel hit first and free-castered, slowing the spinning aircraft. The left main followed, then the right main.

We learned a few lessons in this fine example of interservice cooperation. Where there's a will there's—almost always—a way. Whenever possible, transport the entire aircraft intact. The lack of a tail section probably contributed to the aircraft spinning on landing. A two-point hookup might have helped. ◀

The crew of the CH-54 was CWO4 Frank Libby, CWO3 Frank Swisher and SSgt. Tom Bortner of the 221st Aviation Battalion, Company D, Nevada Army National Guard.—Ed.

Cdr. Danielson was the VC-13 aircraft maintenance officer at the time of this story. He is currently the safety officer at NAS Dallas and a regular contributor to *Approach*.

This Next Trap Could Be Tricky

By Lt. Eliot Gross

It was hard to get too excited about another night JAMEX, but I'd been flying the ball well at night and an OK pass would put me in second place behind the skipper on the greenie board. We launched on time and popped through an overcast layer at 1,000 feet. I turned on the anti-collision light and continued climbing to our prebriefed altitude of 25,000 feet.

Our mission was to fly medium- to high-altitude runs on one of the supply ships in our battle group and give its radar operators some training.

After checking in with the E-2, we switched to the assigned secure frequency and tried to contact the ship. It seemed like everyone and his brother was talking on our frequency and it was a good 45 minutes before we could talk to the supply ship. Finally, with about 20 minutes remaining before we had to be in marshal, we contacted the radar operators. They told us to work on their 180-degree radial and begin our runs at 50 miles. Fortunately, they were only operating about 10 miles from the carrier so we could still get in two runs and make it back in time.

My right-seater, a fairly new guy in the squadron, switched up their TACAN. I saw that we were pretty close to the 180-degree radial. After a frustrating start, things seemed to be falling into place. All I needed was to fly an OK pass and I'd consider the flight a success.

We made our two runs, the ship thanked us and we switched back to Strike. At that point, things got rushed. Looking at the TACAN, I saw that we were only 10 miles from the carrier. It was the last recovery of the night, so I knew that they would want us to push early.

ECMO 1 fumbled a bit on the radios as he tried to see our radial and DME for his call to Strike. I cut in.

"605's on the 360 for 10, state 10.0, switching to marshal."

When we got hold of marshal, the controller told us to hold on the 140 radial at 21 DME, at 6,000 feet. He also said that the ship's approach control radar was down. He asked if we'd be ready to push in five minutes.

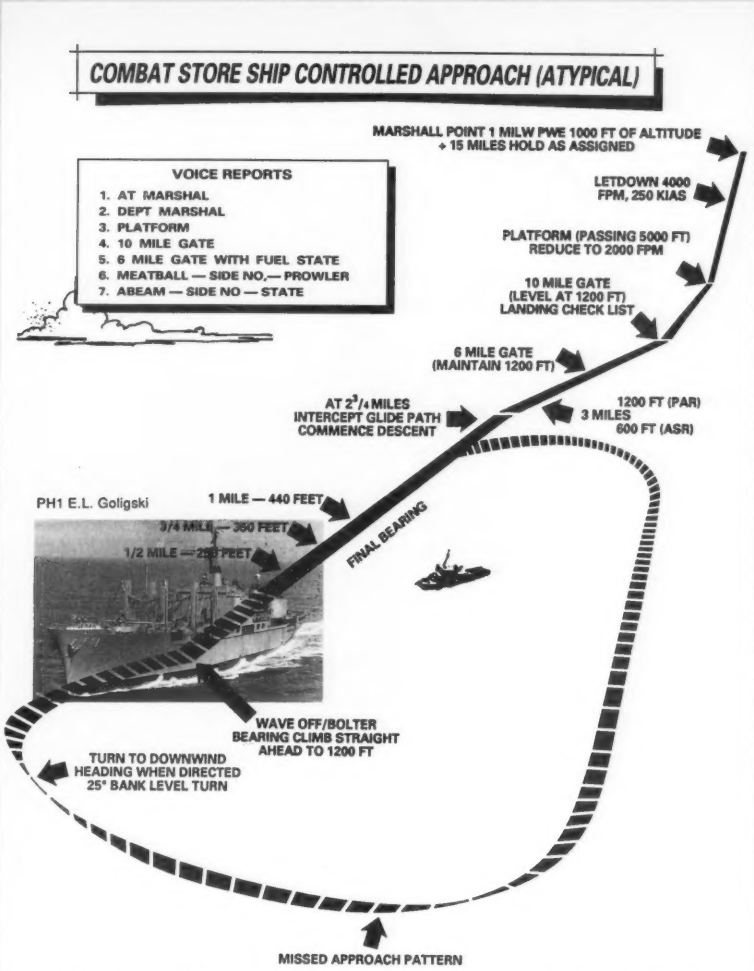


Figure 8-2 Combat Store Ship Approach (Atypical)

UNORIGINAL

I told him we could make it and bustered to the marshal point. A minute before our push time, I started dumping fuel from the wings to get down to landing weight. We hit the 140 at 21 right on time. I secured the dumps and opened the speed brakes to slow down and begin our descent. We were doing close to 450 knots.

ECMO 1 called, "Commencing." I took a breath and began concentrating on getting to a good start to fly an OK pass. Marshal told us to descend to 1,200 feet and contact the final controller on button 16.

At 10 miles, I dirtied up and ran through the landing checks. At six miles, I extended the speed brakes and began slowing down to on-speed. A moment later, the final controller asked, "605, are your receiving a landing check light?"

"Negative," I replied, "and negative bullseye."

"605, take angels point six. Fly final bearing 325."

We descended down through the overcast, and at 600 feet, we were in and out of the goo. The TACAN needle was right on 325, but I couldn't see the drop lights or the landing area. In fact, all I could see was a single white mast light.

"Great," I thought. "After all that, they're not ready for us."

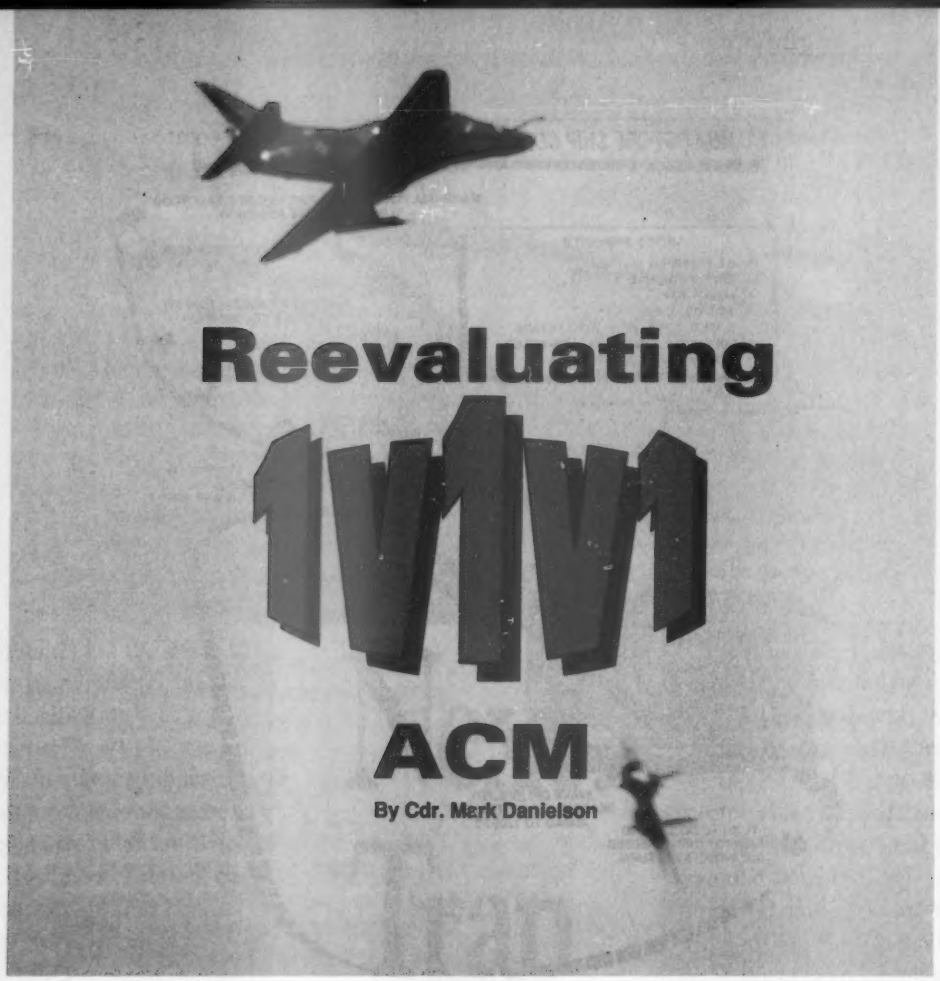
I glanced at the TACAN and saw that we were at two miles. As I looked back up to see if I could make out the carrier, a cold wave went through me. I quickly shifted my eyes to the TACAN dial, knowing what I would see.

My fears were confirmed as I realized that in the rush to get back to marshal, we had never switched the TACAN back to the ship! We were at 600 feet, flying an approach to a supply ship.

I went to military power, cleaned up and climbed. ECMO 1 switched the TACAN to the carrier, and I was somewhat relieved to see that it was still only about 10 miles away. We were already down to 6,500 pounds of fuel, only 500 pounds above night ramp fuel. We trapped a few minutes later with 6,000 pounds.

Later that night I thought about what had happened. Instead of squeezing in the two runs, I should have just headed to marshal. As it was, I put myself in a position where I became overloaded during the rush to get to marshal and push on time. ◄

Lt. Gross is an EA-6B pilot with VAQ-131.



Reevaluating 1 v 1 ACM

By Cdr. Mark Danielson

Peter Mersky

Although time seems to "freeze" during near-death experiences, the sight picture just before impact tends to become etched in your brain. I have had three such experiences during ACM in the past six years; the following incident was the first time that I felt I had controlled the outcome. The circumstances made me reevaluate our goals and how we operate in the multi-bogey environment.

We briefed the fight as a **2 v 2**: two F-14s versus two A-4s. The first run was a MiG sweep followed by two target combat air patrols (TARCAPs). The final setup would be a visual **1 v 1 v 1** with each aircraft having one rear-quarter missile, one flare, 600 rounds of 20mm and no kill removal. The weather was good and we launched on schedule, the A-4s going first.

Once in the area, we got the news that there would be only one F-14 so we flew the alternate mission, a **1 v 2**. The first run resulted in a missed intercept, so we made a 180-degree turn to reengage. This time, the lead A-4 was "killed" beyond visual range while the second A-4 was "killed" with an unobserved Sidewinder. Because of the Tomcat's fuel state, he asked to move on to the **1 v 1 v 1** scenario.

The F-14 was in the middle, with my A-4 at his nine o'clock. Once the second A-4 began a level turn into the fight, I pulled into a vertical arc toward the sun which caused both aircraft to lose sight of me. My ruse worked and the Tomcat engaged the closer A-4. From 28,000 feet, I saw that the other A-4 was no threat; he was more than two miles across the circle and low, while the F-14 was coming directly at me at 24, 000 feet.

It looked like the F-14 had seen me and was going to pass left to left when suddenly, he turned belly up to me in a right turn. I quickly arrived at his six and called my position. Immediately, the other A-4 pilot asked, "Do you have me?"

I felt the adrenaline rush through me since I had lost the other A-4 in the few seconds it took to make my last turn. While I was belly up in a left turn, the other A-4 was belly up to me while lead turning the F-14. Both A-4s made a perfect rendezvous at the Tomcat's six at exactly the same place, separated laterally by less than 100 feet, closing fast with constant bearing and decreasing range!

While we each saw the other at this point, the second A-4 pilot was afraid

of making the wrong move and did not maneuver, hoping for the best. I reduced power slightly, banking into him and using bottom rudder to pass below and behind him by no more than 10 feet nose-to-tail, and with 20 feet vertical clearance. From his "do you have me?" call to our passing each other was no more than two seconds but it seemed like five minutes. The F-14 was completely unaware of the incident since he had never seen me.

There were *four* sets of eyeballs in the flight; everyone was a Topgun graduate. Yet, no one saw a simo run developing. All three pilots continued to fight a 1 v 1 v 1 without keeping the other two aircraft in sight! We knocked off the engagement and it took a few minutes before we were willing to set up for the final run, which went well.

After we landed, the second A-4 pilot and I did a lot of soul searching. We had nearly "expertly" reenacted the classic ACM midair scenario. Like most fighter pilots, we got tunnel vision and focused on the F-14 as it closed for the shot. The only thing that saved us was the radio calls which were unusual for either of us to make. The three pilots had a total of more than *12,000 hours* in tactical jets, but two of us almost became statistics.

Little realistic training occurs in a 1 v 1 v 1 or more scenario. I have yet to hear of a Battle-of-Britain situation in modern warfare. Talking with other adversary squadrons and Topgun, I didn't hear anyone say they saw any value in such engagements. These squadrons also admitted that their 1 v 1 v 1 briefings do not adequately cover what radio communications should be made if someone loses sight of one or more of the aircraft involved. While ACM is a dangerous environment to begin with, the following guidelines, which I derived from my conversations with other adversary pilots, may serve to encourage safety during these fights.

Pilots need to talk more. From day one, adversary pilots are taught to fly zip-lip to avoid blocking fighter radio transmissions or giving away tactics and position. While this has certain applications, it is critical during a 1 v 1 v 1 engagement for each aircraft to call lost sight, and if necessary, knock off the fight if the other aircraft haven't called to continue. While there is nothing in the current training rules about 1 v 1 v 1 scenarios, or about communicating when you have lost sight, they do say that you "always assume the other aircraft does not see you." It's apparent that there is cause to review our current ACM training rules to clarify 1 v 1 v 1 maneuvering requirements. In the interim, communication during ACM should be the focal point of every briefing, including the possibility of transmitting "simo run."

No more than three aircraft should operate independently in a visual fight. Any scenario which includes more than three planes operating independently offers little valid training at a significantly higher risk. However, while the 1 v 1 v 1 scenario provides fighter pilots with the challenge of maintaining sight of two other aircraft while learning how to avoid getting shot, the idea of tracking someone in such a fight is ludicrous.

In a properly flown engagement, you should expect a maximum of 90 degrees of turn or six to nine seconds of offensive maneuvering before you get shot. If a fighter pilot wants to survive in a real-world 1 v X, he will take his best shots at maximum range while keeping his knots up and avoid a close-in visual encounter. We bogey pilots have been teaching that lesson forever. The biggest problem in most 1 v 1 v 1 engagements is that they degrade into unrealistic, slow-speed, rear-quarter fights which don't represent any realistic training. Close-in, slow-speed training should be reserved for 1 v 1 hops.

The current midair rate in the Navy and Marine Corps is cause for concern. Each pilot must be responsible for the thoroughness of the briefing. Once you walk to the aircraft, it's critical that every flight member follows through with that briefing. This midair nearly happened to some very experienced pilots but experience is never a substitute for maintaining situational awareness. It only takes a moment before the situation has completely changed. ◄

Cdr. Danielson is the ASO for NAS Dallas. He flies the A-4M as a bogey pilot.

Minimum Damage

B. Kalist

By Capt. Anthony C. Elliott, USMC

We were in our third and last week of a det. Although we were proud of the work we had done, we were ready to go home. However, the day before our departure, we realized we had brought too much ordnance. Our mission had been forward air control and tactical air control (airborne). But, today, the combat ground element wouldn't need us and we scheduled three planes for a good deal: a deep air strike to a bombing area 85 miles southeast of the field. We had a great low-level route and had filed our flight plan. Everything was looking good.

Ninety minutes before the formal brief, my copilot and I began planning the mission. Everyone in the det felt confident at low level. Being an aggressive Marine, I planned my one pass delivery to the bare minimums. My war load was two pods of five-inch Zunis, a total of eight rockets with illumination warheads. Considering the frag patterns of these warheads, I planned the lowest possible dive angle and release altitude to evade the imaginary threat in the target area.

The CO led the formal brief, and would also lead the mission. We were Dash 2. My assignment, however, was to arrive at the target first to provide a mark-on-target for the next two OA-4Ms. We launched and flew the low-level; the flight was as sierra hotel as it could be without breaking any rules.

It was time to split from the flight and I bumped the power up and turned away, starting my target ingress. At the pull-up point, I began my pop-up attack and saw the target as I rolled wings level. I started checking delivery numbers and everything looked normal.

At the release altitude, I pulled the trigger. I felt and heard the eight Zunis release; I had set them on ripple. Since I was at planned minimums, it did not take long for these monsters to reach terra firma. I had just begun my pull-away when we saw a much larger explosions than we expected. We felt the OA-4 rise and settle.

I quickly checked the engine and fuel gauges, thinking that the trouble would show there first. Everything seemed normal so we proceeded to the rendezvous point for a visual inspection. The CO looked at my aircraft and said it looked OK. I was greatly relieved.

As we flew back to the field, the skipper asked a couple of questions on the second radio.

"Are you sure those were illumination rounds?"

"Yes, sir," I replied.

"Did you go too low?"

"No, sir." My copilot in the backseat confirmed my answers.

After we landed and checked the plane over, we found that it was, in fact, damaged. The OA-4M's nose is a metal cap. The Marines originally intended to mount a good piece of gear in there but didn't. Right in the middle of the cap was a quarter-sized hole. The plane captain opened the nose and found a dent in one of the radio brackets. Then he found a jagged piece of metal sitting on top of that radio. The ordnance specialist said that the metal did not come from my Zunis. We decided that I had inadvertently detonated another piece of ordnance in the impact area. The inexpensive cap was replaced and the plane was on the schedule the next day.

In retrospect, we were very lucky that we did not loose an aircraft or a set of pilots. I also learned the lesson that using minimums is not always wise. ◄

Capt. Elliott was the DSS with PSD-32 at the time of this story. He is currently going through AV-8B transition training with VMAT-203.

But We Made It

By LCdr. Scott Grant

✦ A motivated JO was sent to the beach with instructions to "bring the jet back." Ashore, the aircraft had developed a bleed-air leak that was only detectable when the engine was at full power. This innovative JO figured he would just do the takeoff with that engine at idle. Then he would fly out to the ship and use the engine for the few seconds he needed to get aboard. Obviously, the higher-ups had approved the hop. They knew the plane had not been fixed. The beach facility hadn't been able to fix it; they didn't have the tools or expertise.

The young aviator launched and eventually recovered onboard the ship. Despite the numerous what-ifs, nothing bad happened. I heard this story several months later. The teller finished his account with a big grin on his face, saying, "But we made it!"

✦ In another incident, a second-tour lieutenant was only 40 miles from the field when he began his ACM engagement. He was scant pounds over the briefed bingo, but the weather was great and the field was always open when you got there. He pushed the bingo and got one more fight under his belt. At the knock-it-off, he felt cheated. He was sure he would have more gas than what showed on the gauges. He had never seen them that low before. Good thing the field was so close.

"Uh, oh," he thought, "the field was closed because of a fouled runway. FOD? Earthquake? Who knew." He never thought he would be on a bingo with that little gas. He landed below bingo, "But we made it," he said with a large grin, after relating his experience.

We've all heard the excuses. It was really a down gripe, but we didn't need that capability because it was: VFR, a short hop, shorebased, shipbased, not mission essential.

I can hack it. I gotta get it to the beach or to the boat. It's only FCLP or CQ. The guys will laugh at me if I down it. The Ops O (or MO, XO, CO) all flew it like this last time.

Peer pressure and pressure to perform can foster these various attitudes that don't always immediately indicate an unsafe situation. It's not flathatting, but they can get you, no matter what your experience level.

Leadership plays a big part, from the CO ("I'll fly the bad jet on this mission") to the newly reported pilot ("I can't down the jet on a cross-country because the such-and-such is down.")

If the plane is down, that doesn't mean it's up for you and down for the next guy. We have all spent blood, sweat and tears developing those lists of downing gripes, minimum equipment and smart bingo fuels. Let's use them. If these lists don't reflect what is real, take another close look and change them for everyone's benefit.

Leadership that insists on quality aircraft and making decisions before, during and after flight fosters consistency. Our goal is a flight discipline that is just as good for you as it is for the most experienced or inexperienced pilot. ◄

LCdr. Grant flies F/A-18s with VFA-94.

Due to a lack of photographic contrast, this page did not reproduce well.

My Worst Nightmare

PH2 A.M. Page

By Lt. James G. Sexton

It was a day all naval aviators may look forward to professionally but that makes them feel sad, especially if they have a family. I was leaving for an 11-hour flight to my squadron's base in SWA. Our deployment was part of Desert Shield.

I tried to sleep in that morning, but I could hear my wife and daughter downstairs. I knew I wouldn't see them for at least six months. At 1200, the three of us sat down for our last lunch together for a while. It was a terrible scene. Shortly afterwards, I got ready to leave as my daughter watched me put on the familiar flight suit and boots.

"Daddy work, Daddy work," she said.

"Yes, Shannon, I'm going to work."

It was unbearable but we all go through it, right? Naval aviators are particular good at compartmentalizing our problems.

My crew was scheduled for a 1500 preflight and 1900 departure. Our P-3C was going to be at its max allowable takeoff weight, carrying a full passenger load of 23. I went into the hangar a couple of hours before preflight time to escape the crying at home and to meet the VP detailer who was visiting our squadron to discuss VP billets and possible draw-downs. I had to see him because I knew it would be hard to coordinate a shore billet while overseas.

I never thought about getting tired. After all, once we were airborne and well on our way, I could hit the rack for a few hours.

Our preflight started right on time and we didn't find anything unusual. Afterward, I called my wife for the last time to tell her how the meeting with my detailer went and to say goodby. I didn't realize I was under stress. I'm sure I was, but so was everyone else.

We took off at 1845, 15 minutes early, in less than ideal conditions. It was night IMC in snowy showers and light icing. It was the first time my newly assigned copilot and I had flown together. I was in the right seat and would handle the radios and checklists, while my copilot flew the aircraft.

Approach control turned me to 180. I told the controller we were on a translant and that I wanted to head northeast. He cleared me on to a northeasterly heading and up to 17,000 feet. I read the instructions back and complied.

At approximately 8,000 feet, center told me, "Turn left, no, turn right 30 degrees. That's more like your course, upon reaching 11,000 feet."

I read the instructions back. Center told me there was traffic to my left climbing to 12,000 feet, heading southwest. Center then asked me if I had the traffic in sight. I told them no and that I was IMC.

At 11,300 feet, the controller asked me if I was at 11,000. Again, I said no and that I was climbing to 17,000. He told me to descend immediately to 11,000 and I complied.

After the traffic was behind us, center cleared us to FL 190. We felt comfortable with what was going on. My third pilot and flight engineer wore headsets and were backing up

my copilot and me. The last call we had about traffic was six miles; center had given us a course change of 30 degrees on reaching 11,000.

Approximately 45 minutes later, the next center I contacted told me that an Aircraft Deviation Report was being filed against me and I asked him to elaborate. He couldn't. I would not be able to talk to the controllers issuing the report for some time since I was going on deployment.

I wrote down the chain of events precisely as they had occurred and told everyone who had been listening on the radios to write down what they had heard as well. We called the squadron's duty office via phone patch and told them what had happened so they could call the QA office of the ATC facility the next morning. We were all sure that center had made a mistake and construed the "upon reaching" as "maintaining." I understood it to mean that upon reaching 11,000 I would turn 30 degrees to the right and keep climbing to 17,000 as assigned.

Four-and-a-half months later, after a very successful deployment, this incident came back to haunt me in the form of a Jag Man investigation. The tapes don't lie. Center had, in fact, given me an amended altitude clearance to 11,000 feet and I read it back. Both my copilot and I were shocked at our mistake. None of us could remember reading back the amended clearance. The other aircraft that center warned us about that night had a proximity warning system and it went off, which required, by law, that center file an aircraft deviation report. The closest we were to the other plane was 3.2 nm and 500 feet vertical separation. The FAA pursued the incident through their proper channels and then forwarded the Navy a copy of the report. Following OPNAVINST 3710.7, a Jag Man investigation was begun.

This experience is every naval aviator's nightmare, a form of failure. We are generally more afraid of making a mistake like this than landing on an icy runway with a max allowable crosswind.

Be alert on the radios, especially during the critical phases of flight, such as departure, turnover and arrival. It's a good idea to set up a inner-communication policy for the crew to eliminate any distractions. Keep a log of all instructions. If something happens, you've got it in writing. ◄

Lt. Sexton flew with VP-8. He is now an advanced martitime instructor with VT-31.

A Bre

By Maj. John Ostrom, USMC

It was my tenth hop in the F/A-18. As an experienced F-4 pilot coming off a flight-instructor tour in the TA-4, I began my Cat II syllabus with about 2,000 hours of flight time. This experience, plus the F/A-18's pilot friendliness, quickly let me feel comfortable with the Hornet.

I was scheduled for a low-level navigation hop in a two-seat F/A-18B. An FRS instructor pilot would be my backseater. We flew to point alpha and began the low-level. I was still awed not only by the Hornet's INS and moving-map display, but by the air-conditioning system's efficiency, even at low altitude. The F-4 and TA-4 I had flown were definitely prehistoric.

The route took us far enough north of home plate to require a high-altitude profile on the return leg. At the exit point, I made a climbing turn toward home and asked for 35,000 feet. The controller approved the altitude if I could get there within 10 miles. Traffic coming from the opposite direction at 33,000 feet required the rapid climb.

I acknowledged the clearance and pulled the aircraft into a steeper climb. Passing 29,000 feet, I got a radar lock on the traffic and asked the instructor if he thought that was the plane that center was talking about.

I noticed two strange thing at this time. First, it was hard to talk, and second, the IP didn't answer. Still looking at the radar, I asked the question again, but again, there was no reply from the back seat. Then, I started feeling warm and was having trouble concentrating on the radar.

When I looked in the rearview mirror I saw the IP staring straight up into the sun, his eyes wide, obviously unconscious. Only then did I conclude that, even with my mask on, I was hypoxic.

Pushing the nose of the Hornet over, I pulled the green apple for emergency oxygen and with some difficulty, located the cabin pressure altimeter. It read the same as our actual altitude of 34,000 feet, indicating that the cockpit was unpressurized. I had expected a nice rush of cool, fresh air when I pulled the green apple. My anxiety increased when I didn't see a change and wasn't feeling better. (I was getting emergency oxygen but hadn't recovered from my hypoxia yet.)

The F/A-18 was now in a 45-degree dive. I was concerned that I would not remain conscious. I put in nose-up trim, hoping to buy time if I passed out. I won't argue about whether or not this was a good idea, but it seemed to be at the time. I didn't know it then, but you can overcome the F/A-18's auto trim.

Fortunately, I remained awake and leveled off at 12,000 feet, about 2,000 feet above the ground. During the emergency and dive, the center's controller experienced a failure in his sense of humor. I spent the next 10 minutes calming him down and explaining what had happened. My instructor did not recover for another five minutes. When he did, he thought we were still on the low-level!

Unlike most aircraft, including the F-4 and A-4, the Hornet's ECS does not shut off the air conditioning when you select ram/dump. The first link in this near-mishap chain came when we started the flight in ram/dump. Since the air conditioning was working like a champ, and the first portion of the flight was at low altitude, we didn't see a problem.

Subsequent investigation of our lox system revealed a contaminated lox bottle. The instructor remembered a "burnt almond" smell when he tested his oxygen before takeoff but didn't associate it with a hazard.

We wore our masks throughout the flight. Apparently, the oxygen content of whatever we were breathing was sufficient to sustain us at low altitude but not higher. We would have become hypoxic during the return leg at 35,000 feet even if the cabin pressurization had been working.

The unpressurized climb probably accelerated the sequence. The lack of fresh air when I pulled the green apple surprised me. It turns out that this is normal and you may not get a positive indication that you are, in fact, on emergency oxygen.

Lastly, and most importantly, the symptoms of hypoxia in this incident were completely different from what I had experienced in the chamber during physiology training; they were certainly not what I had expected. Consequently, I didn't recognize them for what they were. It was only when I saw my unconscious instructor in the back seat that I understood what was happening to us. Now, I scan the cockpit altimeter much more frequently along with the cockpit pressure switch before starting up. ◄

Maj. Ostrom flies with VX-4.

ath of Fresh Air

McDonnell Douglas Corp. St. Louis

By Lt. Rich Finnegan

Seasprite In Trouble

We were two weeks into the short deployment. As the det OINC I couldn't have been happier with the way things were going. The ship's crew was sharp and the week-one workups had gone off without a hitch. Our two flight crews were flying our SH-2F for eight hours a day on the average and the helo was holding up like a champ. Everything seemed routine as I climbed the ladder to the hangar deck at 0400.

I found the night check putting on the finishing touches before the early morning go. We briefed and went through our preflight. The bird was spotted on the luxurious, spacious flight deck of our ship 30 minutes before the scheduled launch time. After a smooth turnup and final checks, we launched into the predawn darkness for the first of two scheduled SSSC flights.

For the next two hours the flight went fine. Radar conditions were good as we tracked and visually identified several surface contacts. Somewhere above the 1,500-foot overcast the sun came up to illuminate another hot, hazy day. Winds from the southeast stirred up the usual whitecaps and six- to eight-foot swells. I was grateful to be flying and not riding one of the small, decrepit merchants bobbing in the water below us.

By 0730 we had completed rigging the last contact in our sector before heading back to Mother for a hot pump and a cool soda before the second hop. I leveled off from a climb to 500 feet on a heading of 350.

We were only a half-hour a way from recovery, all the gauges were in the green and we had plenty of fuel. The TACNAV and TACAN were in perfect agreement. My most difficult task at hand was to generate enough stimulating conversation to keep us awake on the way back.

Our pleasant banter was suddenly interrupted by an unnatural rumbling sound somewhere above the aft cabin overhead accompanied by a quick, uncommanded left and right yaw. There were heavy, medium-frequency vibrations throughout the airframe.

"Bad, bad, bad!" ran through my mind as I braced myself at the controls in the left seat, ready to deal with the catastrophic failure that was sure to happen in the next microsecond. It didn't, and a few seconds later, I had managed to swallow the golf ball in my throat.

I glanced around the cockpit, noting that the oil pressure for the combining gearbox was fluctuating between 20 and 60 psi. An anonymous master caution light was flashing urgently. I called for the PCL and announced, "Combining gearbox malfunction." The copilot already had the checklist and we quickly reviewed the recommended procedures.

The SENSO immediately gave a cut to home plate, bearing 350 at 38. I slowed the aircraft to 80 knots and the copilot cleaned up the cockpit and did the immediate ditching procedures. We stayed at 500 feet for a few seconds to tell the ship to close our position as fast as possible.

I began a small, gradual power reduction to start descending to the NATOPS-recommended altitude of 150 feet for the trip back. By this time, the vibrations had increased to the point where they numbed every part of my body that touched the seat. The vibration also came through the cyclic and numbed my right arm, making me feel that there was a layer of air between my hand and the grip.

We leveled off at 150 feet and 80 knots, using extremely small power changes, and froze the collective to keep the load off the combining gearbox. We discussed the procedure in detail and decided to ditch the aircraft if we felt the controls degrade any more, or any other indications of a deterioration in the gear box.

The SENSO continued providing updated bearings and ranges to the ship, while the copilot calculated closure rate and en route time. As the ship made 30-plus knots toward us, we closed her at 80 KIAS with a 25-knot quartering tailwind. With almost 135 knots of closure, cutting our en route time to 20 tense minutes. We accomplished the landing checklist and flew a single-engine (minimum power required) profile approach to a no-hover landing.

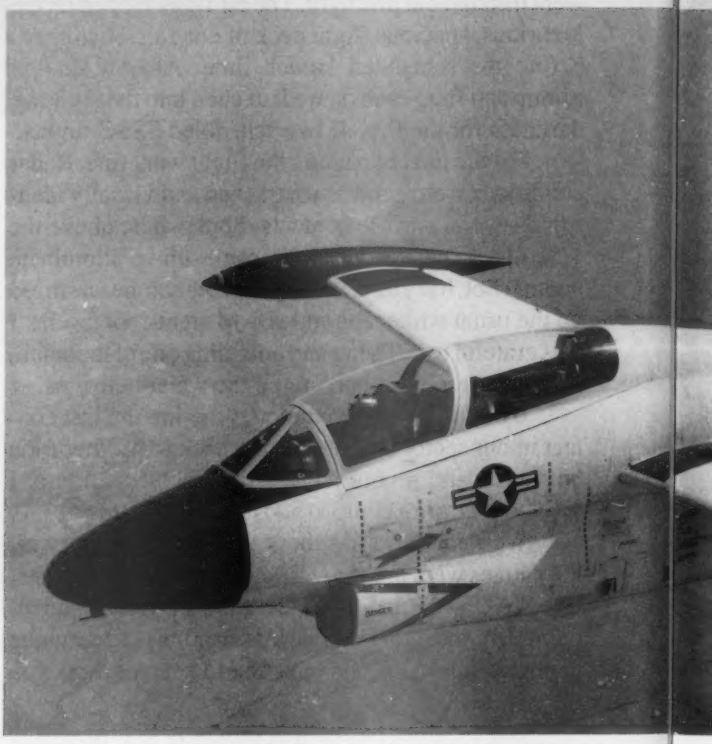
Maintenance found a critical material failure on the main driveshaft as well as several large metal chips in the oil-scavenge filter for the combining gearbox oil. We discussed the incident during the debrief.

We had acted together in a quick, efficient manner. We had diagnosed the problem, taken corrective steps, made decisions and followed our course of action. The ship had also reacted properly. With all the drills during the workups, they knew what to do and did it. Within four minutes of the first emergency radio call, the ship transitioned from a five-knot loiter to flank speed in the right direction with emergency flight quarters set. ◄

Lt. Finnegan is the OINC for HSL-36's Det 5.

Sniffing For Asphalt

By Lt. Todd E. Pollard



It was supposed to be a good deal. Our T-2 squadron had a jet stranded onboard USS *Lexington* (AVT-16) with a broken mainmount. I had the "misfortune" of being left in Pensacola to wait for the ship to return. I would keep tabs on the aircraft's crane-off and repair, then ferry it home. This was Thursday and the ship wasn't due back until next Monday.

After *Lex's* arrival, the mechs repaired the plane quickly and got her ready for an early morning launch on Tuesday. I had been away from home for a little more than two weeks and I was looking forward to a quick two-leg trip to see if my pets were still alive.

The Gulf Coast forecast indicated isolated thunderstorms, max tops FL300, occasional light to moderate icing from 12,000-18,000 feet, and about 110 knots of wind in the face on the way to Houston-Ellington, our standard fuel stop. Ellington weather was unsat—100-foot overcast, one-sixteenth mile in fog. The forecast at my arrival time was significantly better—1,500-foot ceiling with seven miles visibility. I used Barksdale AFB as my alternate, which was also forecasting 1,500 and seven. I planned to call Metro en route to confirm that Ellington was improving, and if it wasn't, I would divert to Barksdale from the halfway point.

Unfortunately, the forecast did not consider a front that was moving backwards northwest into the Texas-Louisiana area. Just past New Orleans, I called and found that Ellington was still reporting 100 feet and one-sixteenth of a mile. I didn't want to gamble on a rapid improvement and asked for clearance to my alternate. I was dismayed to learn that Barksdale was 500 feet and one mile, with no improvement forecast for the next 20 minutes.

Barksdale is one of the few Air Force installations without a PAR, so I chose the ASR approach with an MDA of 620 feet, 457 feet above touchdown. I expected it to be close and began planning for a missed approach. I anticipated starting the ASR with about 1,500 pounds of fuel. In any normal scenario, I would be uncomfortable starting an approach at an IMC destination with that little fuel. But, when Barksdale's weather dropped to 300 and one, I was convinced that my situation was now serious.

The nearest field with better weather was far outside my Guppy's remaining endurance. England AFB was the nearest field with a better approach, a PAR advertising 100 feet and one-quarter-mile minimums (200 and one-half for single-piloted aircraft), and a 2.5-degree glideslope.

I decided to fly the ASR at Bergstrom flaps-up, no speedbrakes, and I didn't lower the gear until two miles to conserve fuel. I arrived at the MDA early and I started looking for the runway.

I never saw it. At the missed approach point, I took a deep breath, cleaned up, climbed, turned, and said the "E" word. The bingo profile said it would take 1,425 pounds to get to England AFB. I was showing 1,200-1,300 pounds. This amount allowed for 600 pounds on deck—the T-2 shows low fuel lights at 535-675 pounds—but did not include the PAR approach and dirty-up back to England.

En route to England, I asked for their weather. They said it was 100 feet, overcast, occasional obscuration, and an RVR of 1,200 feet. Not good. The pucker factor increased dramatically. I asked for England's most proficient PAR controller, explained my plight and got climbout instructions to a preplanned ejection area if I needed it. I began sifting through the cockpit, deciding what to bring and what to leave. I stuffed my now-worthless DD-175-1 in my pocket to show the FNAEB.

I started down early, asking for a three-mile PAR pickup, and once again, I flew the approach no-flap, no-speedbrakes and held the gear until two miles. I had never flown a PAR like that in the T-2, and if it weren't for the controller's expertise and the smooth flight conditions, I might have had trouble handling the unusual approach.

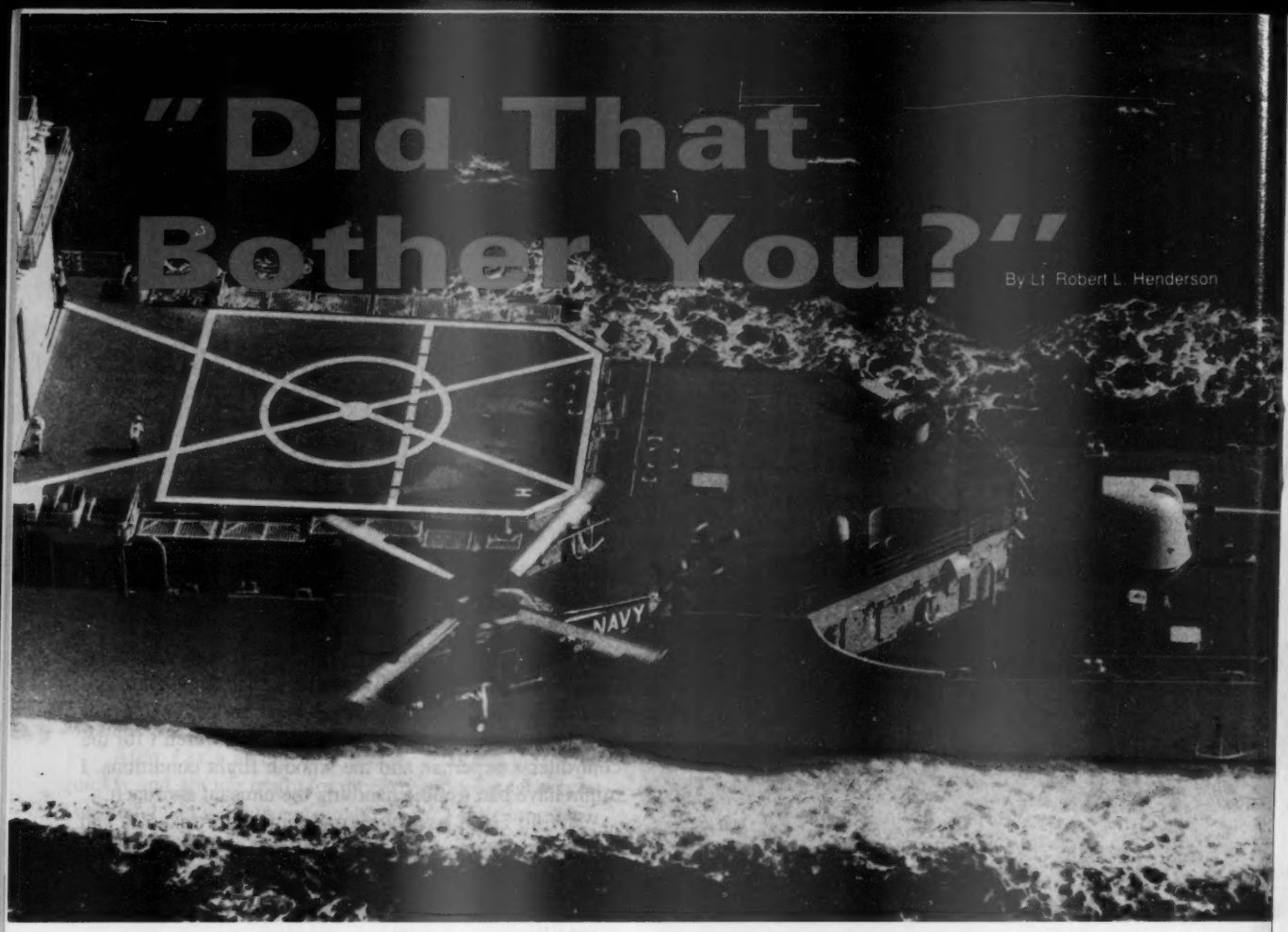
Well, I still have the same number of takeoffs and landings so this story has a happy ending. I broke out (at some unnamed altitude) and landed (with some unnamed amount of fuel). Those numbers still make me unhappy when I think about them.

Reviewing my decisions and the events, I don't see any glaring headwork errors. Essentially, I fell victim to the rare "bad forecast." Perhaps I should have diverted directly to England with its well-calibrated PAR instead of trying the ASR at Barksdale. I don't believe I allowed get-home-itis to affect my decision to launch. Given the same weather brief, most pilots would not have hesitated to fly.

I learned that controllers don't give much attention to a minimum-fuel aircraft, but that they respond well to one that is at emergency fuel. I also learned that it is wise to maintain proficiency in PARs for reasons beyond semiannual EP requirements. And I learned that on days like that, being "on and on" is vital. That allowable 75 feet altimeter error, or that allowable four degrees of TACAN-bearing error can easily affect an approach's outcome, so I don't need to add poor pilot skills to the error factor.

I now place more emphasis on IFR flying and thought processes. It doesn't matter if you fly good Blue-Angel form, put bombs on target, or wax the bogey if you can't be precise enough to put the plane where you want it at decision height. ◄

Lt. Pollard is a SerGrad instructor with VT-23.



"Did That Bother You?"

By Lt. Robert L. Henderson

Our H-2 detachment was embarked in a *Spruance*-class destroyer. It was a clear, crisp fall morning in Westpac, a great day to fly. This was my second deployment and I had recently qualified as a helicopter aircraft commander (HAC). I finally had a chance to put my experience and qualifications to the test by flying off the small deck with a junior pilot. Nothing had qualified me, however, for what would happen that day.

The det OINC, the junior pilot in the det and one aircrewman had launched for a day, over-water navigation hop while the ship conducted small-boat operations. After my brief in CIC for the second go of a double cycle, I went to the flight deck to get a look at the weather. While I was on the deck, the OINC's helo flew by at 150 feet. The aircrewman was sitting in the cargo door waving at us.

I went back into the hangar and began the NATOPS brief with my copilot. Suddenly, a call to emergency flight quarters came over the ship's 1MC. I thought it was a minor problem. It was not unusual for the SH-2F to have a minor malfunction and I assumed this was the case.

I stopped the brief and ran to the bridge to see if I could help. A second call came, "Helo in the water!" That call had to be a mistake.

When I reached the bridge, the captain was on the starboard bridge wing and I went up to him. I expected to see the helo on short final and asked, "Where's the helo?"

"There's your helo," the captain replied, pointing toward the starboard quarter of the ship. I couldn't believe my eyes. There was a large, circular impression on the water's surface 200 yards from the ship's stern. It rippled outward and was littered with debris. The H-2 had crashed! I felt the blood rush to my head and my face flush. I grabbed a pair of binoculars to search for survivors.

After what seemed like an eternity, one of the crewmen surfaced, followed by another. Within minutes, one of the crewmen was talking on guard. A small boat was already in the water and on its way toward the survivors. I could see two people in the water I kept looking for the other man. The aircraft sank immediately but I couldn't give up hope.

Within 15 minutes, the two crewmen were back onboard. We learned that the OINC and the aircrewman had been rescued with moderate injuries. The copilot was still missing. A helicopter from a nearby air station evacuated

the injured crewmen.

SAR support arrived quickly. The area was teeming with helicopters and ships, all searching for the missing copilot. The impact was so close to our ship that I knew we would see him if he surfaced. I also knew that if he didn't appear within a couple of minutes, he wouldn't survive.

The search continued. As night fell, I couldn't deny any longer that he had gone down with his aircraft. A close friend was gone. His wife was now a widow, and his newborn son didn't have a father. One of the most difficult things I have ever done was admit to myself that he was gone. That night I forced myself to go to the captain's stateroom.

I told the CO that I didn't think there was a chance of finding the copilot. The ship continued the search through the night. I went to the flight deck several times, looking for his flares...nothing.

What happened? Why? According to witnesses, the H-2 flew by the ship's stern at low altitude. Then the helo went into a nose-high attitude—one observer said that it looked like the aircraft was standing on its tail—followed by a descending turn to a nose-low attitude. I believe the pilot began a wingover at low altitude and couldn't recover before he hit the water.

The det OINC was in the right seat and was at the controls. The aircrewman was not in his seat but strapped in the crewman's harness and sitting at the edge of the cargo hatch, which undoubtedly saved his life. The OINC's seat separated from the aircraft on impact, which also proved to be the critical factor in his survival. Witnesses said it was amazing that anyone survived.

The OINC was an outstanding stick. He had flown the H-2 for years and knew more about the aircraft than most maintenance crews. He was a former RAG instructor and this was his second cruise as an OINC. He had also completed helicopter EVM (evasive maneuvering) training and was widely respected for his skill and ability. *Unfortunately he lacked one important trait, judgement. -Ed.*

SH-2F NATOPS does not specifically prohibit wingovers but it does prohibit aerobatic flight. NATOPS also specifies limits on nose attitude and angle-of-bank. NATOPS and good judgment should have prevented such a maneuver.

I had seen a wingover a few weeks earlier. I was the copilot for the OINC. He began the maneuver without warning. After he completed it, he looked at me and asked, "Did that bother you?"

"Hell, yes!" I said. "It sure did bother me! Don't *ever* do that again!" In the few flights we made together after that, he never did.

His wingover didn't scare me; it angered me. Where was crew coordination? (This incident is now discussed as part of our aircrew coordination training.) The maneuver wasn't briefed and he didn't announce it. I thought he might be testing my limits to see how I'd fly with junior pilots. Even though it isn't strictly prohibited by NATOPS, his action was outside the bounds of common sense. When a dangerous situation develops, you have to speak up. Safety outranks everyone.

When we returned home several months later, I learned that the OINC had flown wingovers with several other pilots, including two junior aviators on their first detachment. Both of these pilots spoke up and he never did it again.

There were several other junior pilots, however, who thought his action was OK; it improved their skill and proficiency. When an aircraft commander flies outside the accepted limits, he not only sets a bad example, but can also set a bad precedent that other pilots might try to emulate.

The OINC had developed some dangerous tendencies and it wasn't until after the mishap that the squadron CO and the safety officer learned what had been going on. They were blindsided. Why didn't someone speak up? I can think of three reasons.

Some pilots thought that he was cool, and that flying the aircraft beyond its limits would enhance their ability to fly. Some pilots thought that speaking up in the cockpit was enough. However, if someone breaks the rules, even though he stops when you call him on it, isn't it likely that he will try it again with someone else? The third reason is an ethical dilemma. No one wants to turn in a colleague, particularly someone who is senior to them. I've talked to many other aviators from different squadrons and communities and the same situations exists, even outside naval aviation.

Junior aviators don't want to rock the boat. They are not sure whether they'll be heard or whether they'll get themselves in trouble. They're also unsure whether corrective action will be taken; after all, it's the word of a junior against that of a senior. Even though we had a very close wardroom, the problem with the OINC was never brought to the skipper's attention.

I don't claim to be an expert, but there are a few things a command can do to open lines of communication. All aircrew should be briefed in no uncertain terms as to what are, and what are not, acceptable procedures. They should also be briefed on all aspects of the squadron's safety policy. New aircrew should receive personal briefings from the top levels of the command. All aircrew should be debriefed following a deployment.

Pushing the limits of the aircraft and ourselves is vitally important in developing skill and confidence. Pushing ourselves beyond these limits can result in disaster. The OINC's mishap clearly demonstrates what happens when people exceed these limits. ◄

Lt. Henderson was an H-2 pilot with HSL-37 at the time of these events. He is currently assigned to the Naval Postgraduate School.

Capt. Quinlan's battle-damaged F/A-18

Maj. R.M. Knutzen, USMC
Capt. S.M. Quinlan, USMC
VMFA-314

On the first morning of the ground offensive in southern Kuwait, Maj. Knutzen and Capt. Quinlan launched in two F/A-18A Hornets for an air-to-ground mission. En route to the target area, the section received a call from the Direct Air Support Center (DASC) that Marines were under fire from an Iraqi multiple-rocket launcher.

After contacting the FAC(A) from VMFA(AW)-121, the two Hornet pilots learned that the target area weather was 7,000, overcast, and that there was enemy anti-aircraft fire. Maj. Knutzen took his section under the overcast and found and destroyed the enemy rocket launcher.

The two Marine aircraft still had ordnance remaining and they flew south to a second rocket launcher and destroyed that position. As he came off that target, Capt. Quinlan felt his aircraft shudder as if he had gone through jet wash. As the Hornet rapidly decelerated, he knew he had been struck by a shoulder-fired SAM.

Capt. Quinlan was at 200 knots and 6,000 feet over enemy territory. He did not know which engine had been hit and he left both throttles at military as he flew across Kuwait Bay to the Persian Gulf. Navy SAR had been notified.

Capt. Quinlan climbed into the smoke and clouds which extended to 20,000 feet. He got an engine left caution, associated fire light, and he also saw smoke trailing behind his hornet. Following NATOPS, Capt. Quinlan shut down his left engine, which extinguished the fire, and he jettisoned all external stores.

Hearing that his wingman had been hit, Maj. Knutzen came around in a hard right turn to help just as his own aircraft was struck by a SAM. Maj. Knutzen saw flames over his shoulder and heard the engine left caution. He shut down the left engine and put out the fire with the extinguisher.

The two Hornets were still separated as they climbed out over the Gulf. As he continued his climb, Capt. Quinlan inadvertently entered an imbedded thunderstorm which caused his canopy and wings to ice over. Continuing with NATOPS, he used the aircraft anti-ice system and was able to break into clear air over the Gulf.

Once VFR, Maj. Knutzen and Capt. Quinlan rejoined and flew a VMC single-engine approach to their home field instead of an IMC single-engine emergency approach to the divert field.

The two pilots coordinated with the Navy as they flew more than 200 miles on a single-engine bingo. Both aircraft stayed together until they made their individual approaches.

Capt. Quinlan's aircraft had two FODed engines, damage to the aft fuselage, and damage to the left vertical and horizontal stabilators. Maj. Knutzen's Hornet had one FODed engine, damage to the aft fuselage, and damage to the left vertical and horizontal stabs. Both aircraft's tailhook tips were blown off.

Top to bottom: Capt. S.M. Quinlan, USMC; Maj. R.M. Knutzen, USMC

BRAVO ZULU

Left to right: Ltjg. Glen Campbell, AW2 Ty Welch, Lt. Stuart Howard

Lt. Stuart Howard
Ltjg. Glen Campbell
AW2 Ty Welch
HSL-46

After a practice torpedo drop, Cutlass 467 returned to USS *John L. Hall* (FFG-32), and loaded fuel, cargo and passengers for a flight to the beach. Lt. Howard (HAC) leveled off at 1,500 feet, with 112 nm to home plate. Suddenly, the crew heard a loud bang followed by a rumble. Both torque indicators fluctuated wildly. Ltjg. Campbell (co-pilot) determined that the No. 2 engine was having a compressor stall and they turned back toward the ship.

En route, the crew went through NATOPS procedures for regaining power from the stalled engine, without success. They prepared for a single-engine landing. AW2 Welch (SENSO) prepared the passengers for a possible ditching. The ship set emergency flight quarters within four minutes and maneuvered for the best winds.

With Ltjg. Campbell backing him up on checklist procedures, Lt. Howard flew a single-engine no-hover approach to the center of the deck and landed.

Lt. Mike Connell
VFA-27

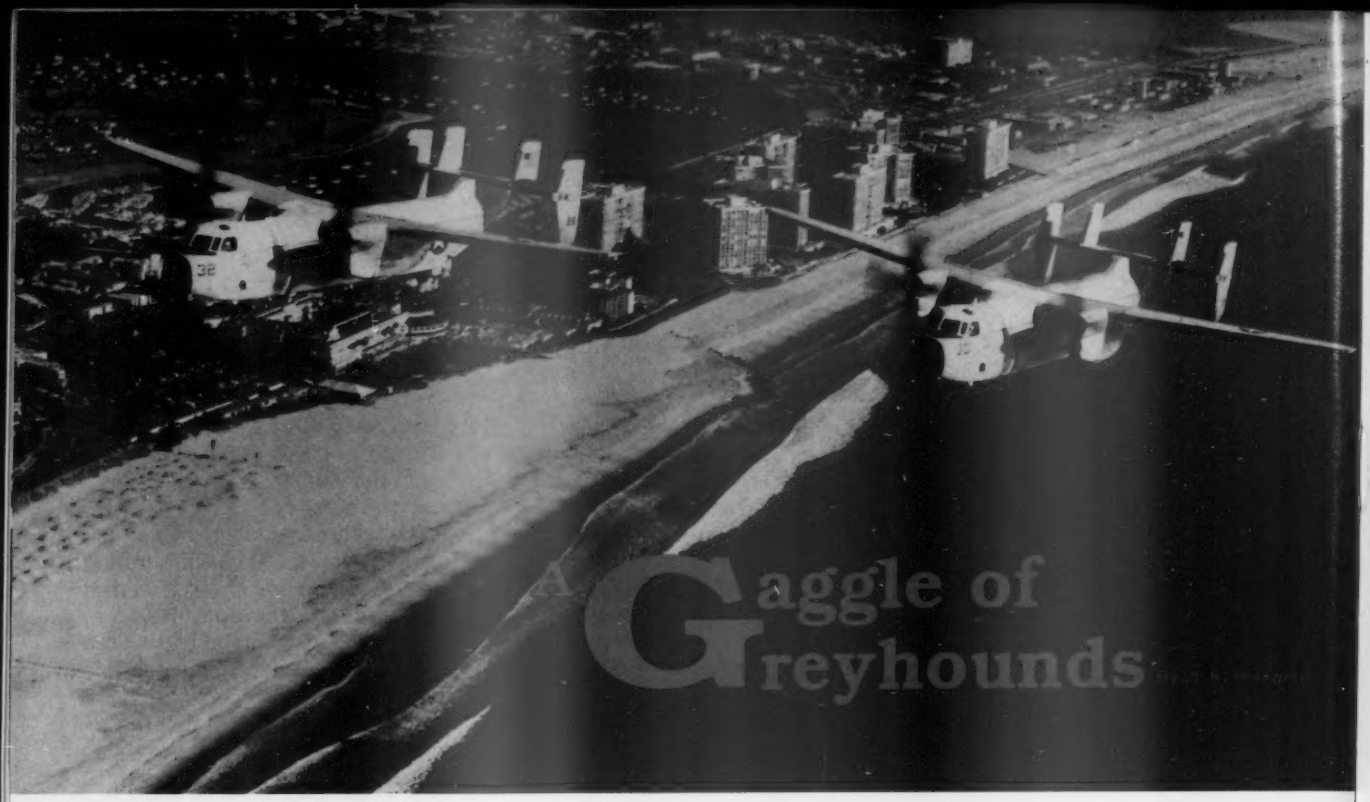
Lt. Connell was flying an F/A-18D borrowed from VFA-125 for an FCLP period at NAS Lemoore. After entering the landing pattern and lowering the landing gear, he noticed that the gear handle light remained on and the green down-and-locked indication was not lit for the left mainmount. He made a low approach so that the LSO could check the gear's position, but the LSO couldn't tell if the mainmount was down and locked.

Lt. Connell climbed to the 2,500-foot delta pattern to do some trouble-shooting. After checking with the squadron duty officer, he exhausted the NATOPS PCL procedures. Another F/A-18 pilot also looked the aircraft over. Lt. Connell decided to make a minimum rate-of-descent landing to a short-field arrestment.

On touchdown, he felt the port mainmount buckle and immediately fed in right aileron. He also went to full afterburner to prevent the wing tip from hitting the runway and possibly snagging the arresting gear cable. Using burner would also give him sufficient power and airspeed to get the Hornet airborne again in case of a hook skip.

The tailhook engaged the arresting gear with Lt. Connell minimizing control inputs, which reduced drift and aircraft damage. Halfway through the arrestment, he secured both engines, preventing possible FOD damage.

Investigation showed that the retractor actuator had failed, preventing the gear from extending properly.



A Gaggle of Greyhounds

Formation flying is an important skill for carrier aviators to develop. It builds hand-eye coordination and crew coordination. It also provides a way to organize gaggles of singles in the same area. Unlike most jets, however, C-2s rarely fly formation.

I was an aircraft commander on my second tour. I had my section lead qual from my previous squadron. When the chance to fly form came up in my new squadron (two C-2s, FCLPs, VFR, no pax), I jumped at it. No one else in the flight was excited, though.

One of my bargaining chips was that my copilot and I would be Dash 2 and we would be doing all the work. I finally convinced them. I briefed the hop thoroughly, including power settings and airspeeds. I said that hand signals would be reinforced on the radio using a common VHF frequency.

During our startup, we couldn't get our VHF to work so I told the lead (twice) that our VHF was down and that we would use UHF base as the common frequency. The copilot in the lead aircraft acknowledged and we taxied.

After the launch, we tried to join up. We were 20-30 knots above the briefed climb speed and weren't closing. I asked the lead for his airspeed and the copilot gave a speed that was different from the one we had briefed. Just as approach cleared us into the field, I looked out my right window and saw that we were going to have to make a right turn and descend for the initial. I looked to my left and was surprised to see the lead's wing butt staring me in the face. The lead wrapped it up into us without telling us. We were at flight idle and still overtaking him when I told my copilot to underrun. I asked the lead what he was doing. I heard no reply. We were safely separated and I told my copilot to rejoin and told lead our intentions.

We rejoined just in time to look like a flight of two pterodactyls in the break. Because of FCLP requirements, we returned as two singles at separate times and couldn't debrief the hop. What had happened?

The next day, the aircraft commander in the lead plane—a seasoned lieutenant commander—confessed he hadn't heard our first call in the chocks and had been using his VHF radio to relay his intentions throughout the flight. The erroneous airspeeds he used indicated his inattention to the brief; he didn't want to fly form, anyway.

I made the mistake of assuming that the other pilots had as much experience as I did flying form and I chose to sit in the right seat for the FCLP. I also didn't realize that my copilot was relying heavily on radio calls to precede flight maneuvers.

Finally, as much as I love flying form, as important a skill as I think it is, and as infrequently as the chance to fly form arises, I shouldn't have pushed anyone who didn't want to fly form to participate. ◄

Lt. Owens flies with VR-40.

Vertigo Like You Read About

By Lt. Ira Saligman

"I should land by seven o'clock and be home by eight. Any cold ones in the fridge?" This is typical of most conversations with loved ones just before a holiday or major deployment. The push to get ready for an accelerated deployment had everyone tired, and burned out.

It was the last FCLP before Christmas and the cruise. There was another pilot in my right seat so we could both bounce. I was a bit congested but could still clear my ears. Besides, we weren't going above 1,500 feet.

After the standard brief, we took a quick look at the book. Before taking the runway, we double-checked the light configuration. We didn't want to look bad at this point in the game. I noticed a small cabin-pressurization change on the runup, which was not unusual. By the two-board, the pressure was noticeably worse and after rotation, I was in all-out pain. I felt like someone stuck a grappling hook in my right ear and was twisting it.

My mind raced. "Keep the airplane flying," I kept telling myself. "Concentrate on the gyro, wings level, nose up eight degrees." Then my head started spinning. I lost all spatial awareness. It was the worst case of vertigo imaginable. Vertigo like you read about. Horizons were everywhere.

"You've got it!" I yelled.

"What?" asked the other pilot.

"You have the airplane. Take it! Take it now!"

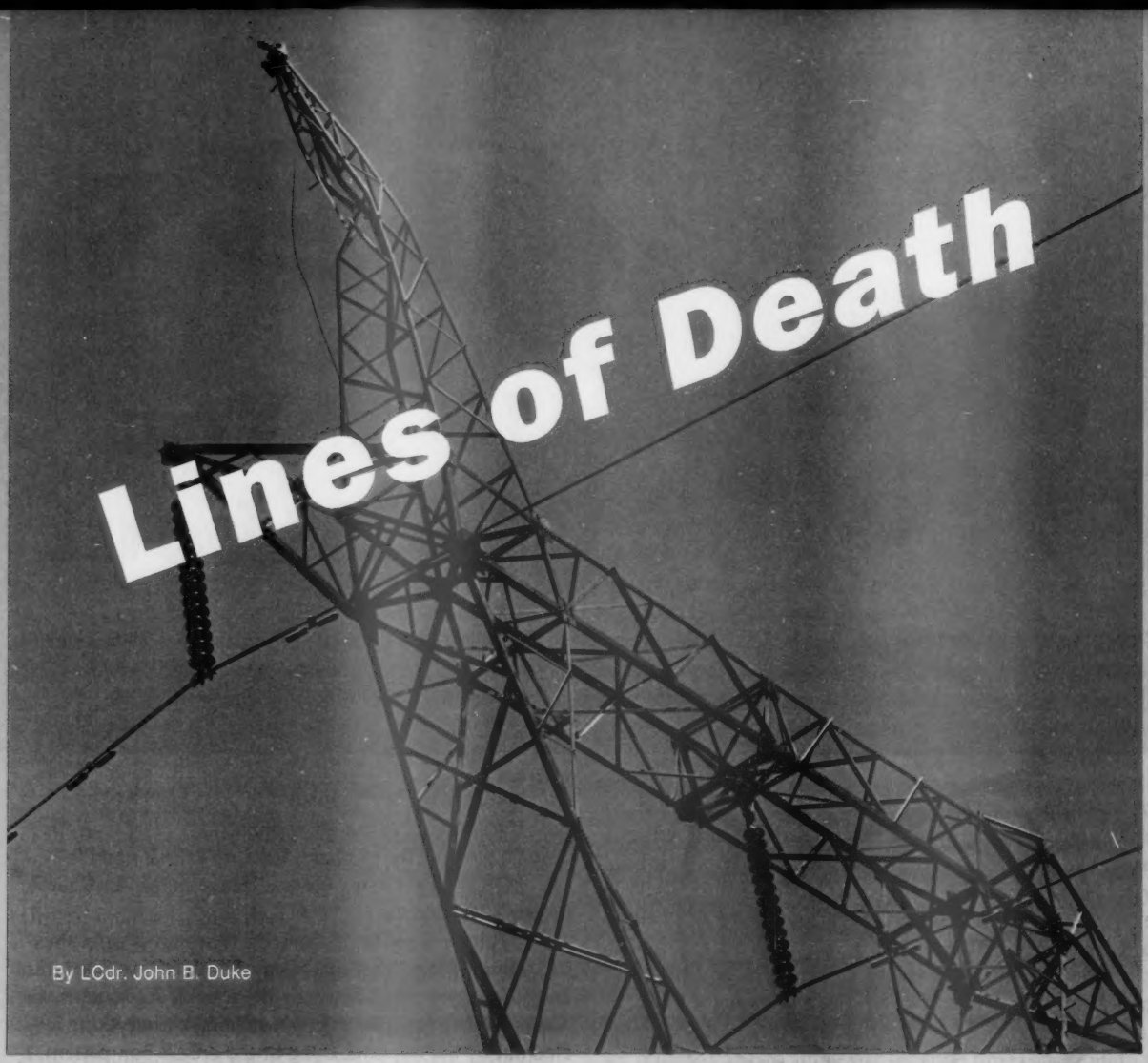
"OK, I've got it, wa-wa-wa." He sounded like Charlie Brown's teacher.

"Think priorities," I thought. "Aircraft is safe. Pressurization, dump." I went through NATOPS procedures and soon appreciated knowing them cold. As soon as we dumped cabin pressure my pain subsided. Everything leveled out by the downwind leg of the ACLS box pattern. I could fly the aircraft again. The cockpit had overpressurized, which is when injuries happen. It was enough to turn my world inside-out and sideways. We turned in for a visual approach. Once back on the line, a troubleshooter fixed the jet in less than five minutes.

With normal cabin pressure, I was fine at 1,800 feet earlier that day, but my sinuses couldn't handle large, instantaneous ovepressurization. Being slightly congested, I should have questioned my own capabilities.

During busy times like holiday seasons, preparing for a major deployment or going on leave, we need to take extra precautions when we fly. How do you know that the other guy is OK? How can you be sure that he's thinking about the flight and not the big Christmas party? Even the best pilot can be distracted. In the time that it took to read this article, several links in that all-too-familiar mishap chain could have been found and broken. ◄

Lt. Saligman is a first-tour S-3B pilot with VS-32.



Lines of Death

By LCdr. John B. Duke

The Intruder crew sat quietly in the helo as they went up the valley. Their skipper was along for this ride; he also wanted to see what had removed six inches from the top of the vertical stab of one of his A-6s the previous day.

The weather, OPTAR and aircraft availability had been unusually kind to the squadron that month and all the aircrews had gotten their fair share of low-level and bombing missions – the kind of flights that build confidence and a good comfort level in the crew. Unfortunately, a rising comfort level is sometimes accompanied by a declining sense of alertness.

There are many hazards in the low-altitude environment and every attack pilot seems to have a different opinion about which is the most serious – bird strikes, blind ridges, power lines, low visibility or aircraft malfunctions.

The pilot of this A-6 crew had, in fact, been involved in a conversation on that very subject only days before. While sipping cool ones in a Westpac bar with his aviator buds, he said that what scared him the most when flying low in the local area were the power lines. He had seen them strung across the valleys 600 feet above the floor with no orange markers. The stanchions could be as high as 400 feet, and many lines weren't shown on the charts. He

was a pilot who would never get too low on a newly planned low-level route lest he have an unscheduled encounter with one of these power lines.

After the week long det, the crew launched from NAS Cubi Point on their way back to Whidbey. Breaking the flight into two legs gave them plenty of fuel for a few "extras," and they decided to do some VFR low-level flying in the local area before climbing on course to their mid-point refueling stop.

They entered a valley of opportunity and followed it for more than 12 miles as it wound its way up into the mountains. Suddenly, just after cresting a ridge, the crew heard a loud thump and felt the plane shudder. It didn't seem that significant; there were no improper engine indications, no controllability problems and no caution lights. But something *had* happened and they made the wise choice to return to Cubi.

The helo approached the saddleback at the end of the valley. The power lines were just ahead and barely visible as they crossed from one of the stanchions on the left that had paralleled the valley to the one on the right. The right stanchion was not visible since it was on the far side of the ridge. The helicopter hovered at 160 AGL, directly abeam the lowest of the six lines.

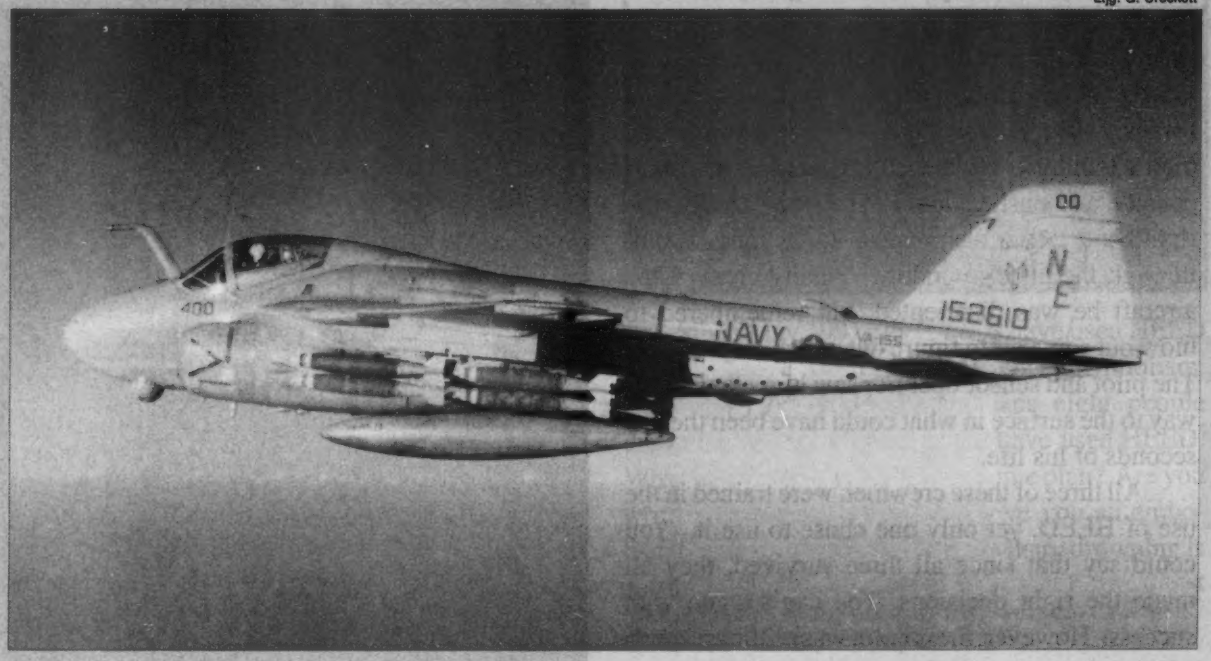
Whether this crew made a habit of flying this low or whether this was a momentary lapse of discipline, these lines surprised them.

As the skipper looked out of the helo at the receding row of metal towers, he traced his finger on the chart, along the line of symbols to where they crossed a valley just past a saddleback.

Ironically, if the A-6 had been several feet *higher*, this crew would have "bought the rice paddy." Flying an undesignated route, below authorized altitudes, without studying the chart beforehand were all signs of looking for trouble. And this crew found it. If they had been on a pre-planned, authorized low-level route, and if they had studied their charts before the flight, these lines of death would have been nothing more than a split-second glint in the sun as they flew home. ◀

LCdr. Duke flies with VA-115.

Ltjg. G. Crockett



Make a Decision

Why do some helicopter crewmembers choose not to use their HEED bottle?

By LCdr. D. J. Thorn

It was to have been a routine SSC mission in the Persian Gulf. As the SH-60B lifted from the frigate and the pilot applied power to transition to forward flight, a blade in the first stage of the gas generator vibrated loose. The crew heard a loud bang as the engine destroyed itself. Ten seconds later the helicopter hit the water, rolled over on its right side and sank.

The pilot took a breath and escaped through his emergency window. The sensor operator waited until all motion ceased. As the water filled the cabin, he put his HEED bottle in his mouth and drew a breath of air. When the pressure equalized, he opened his emergency window and got out.

The copilot took a good breath before going under, but couldn't open his emergency window. He got his door partially open and was on his way out when it slammed shut, pinning his helmet and right hand. He inhaled a little water and started to panic. Then he saw light coming through the pilot's window. He braced his feet on the center console and pushed against the door, freeing his right hand. After unstrapping his helmet, he shot through the pilot's window. Finally clear of the aircraft he was disoriented, but remembered to blow out some air to figure out which way was up. The pilot and sensor operator saw him clawing his way to the surface in what could have been the last seconds of his life.

All three of these crewmen were trained in the use of HEED, yet only one chose to use it. You could say that since all three survived, they all made the right decisions. You can't argue with success. However, the copilot was within seconds of drowning.

In another HEED-related incident, an SH-2F on a surveillance mission entered a descending, decelerating turn to identify an object in the water when the aircraft began to yaw uncontrollably to the right. It spun four or five times before it hit the water and sank. The cabin filled with water and the helicopter rolled over on its right side. Although the first crewman was not able to take a breath of air before going under, he had no trouble getting out. The second crewman was able to take a breath, but became disoriented as the aircraft rolled over. He pulled his HEED bottle out, took a breath then released his lap belt. As he was getting out, he dropped his HEED bottle, but since it was tied to his SV2, he recovered it. Although the mouthpiece was full of water, he purged it and got another breath of air. He said later that HEED saved his life. The HAC first tried to get out through the cargo door but it was jammed. Then he looked for his HEED bottle but could not find it (it was not properly tied to his SV2).

He noticed the copilot's door was blocked so he crawled to the aft cabin, getting stuck in the process. Just before passing out, he managed to clear the aircraft although he can't remember how. The two crewmen revived him on the surface. Searchers were only able to find the copilot's helmet and seat cushion. The investigators believe he lost his helmet, hit his head and drowned.

It is unlikely in this case that HEED could have saved the copilot. Evidence suggests that he was incapacitated on impact. Since his seat cushion floated to the surface, he may have released his lap belt (or it may have failed). The second crewman was about 30 feet under water when he finally escaped. Why do some helicopter crewmembers choose not to use their HEED bottle? Part of the answer is in training; another part is in attitude. As with automatic actuating devices in survival equipment, such as the FLU-8P for TACAIR crews, using the HEED bottle is not the primary method of escape. The first option is to quickly get out of the aircraft. If the crewmembers encounter any delay or difficulty, then they use their HEED bottle. When do you consider yourself delayed? How long will you try to escape before pulling out your HEED bottle? If you wait too long, you may not have the presence of mind to remember to purge the regulator, if you even remember you have a HEED bottle at all. The HEED bottle lasts at least two minutes at 20 feet and 50° F; during tests it averaged 3.1 minutes.

When HEED training was just getting started two incidents that were treated as arterial gas embolisms—but were probably hyperventilation—occurred. Neither aviator suffered long-term injury or disability. Yet the stories that arose from these incidents, and the fears of helicopter crews today about embolism, may be an underlying factor in deciding whether to use HEED.

HEED Saves Since 1987

Aircraft	People on board	Survivors who used HEED	Fatalities
UH-1	10	2	4
SH-2	17	7	2
SH-3	12	4	1
H-46	12	4	1
H-53	5	2	0
H-60	12	7	0

Since May 1991, 26 aviators have used HEED during egress. Not one experienced embolism. Conversely, in the same mishaps eight people drowned, seven of whom could have used HEED. Why didn't they? What's your game plan? Are you worried that your HEED will give you an embolism? You can be treated for embolism; drowning is permanent! ◄

LCdr. Thorn was a mishap investigator at the Naval Safety Center. He is currently assigned to the Naval Postgraduate School.

Just a Crew of Knuckleheads?

By Lt. William T. McClain

PH3 John H. Hackersmith

A clear sky and a full moon, one of those nights we all dream about. Our LAMPS Mk III det had been in the Persian Gulf for three months. Tonight, we were at 7,000 feet MSL. Before you ask the obvious question, "What in the world was a helo doing at that altitude?", let me explain.

We were conducting instrument training and needed to find cooler ambient air because our aircraft's ECS only worked in the "hot" mode. We also needed to get better HF radio reception to hear the VOA broadcasts.

We felt cooler and with only an hour left, I suggested we practice night dopplers; it would be a shame to waste the bright moon. The HAC agreed and we descended to a normal altitude. We broke out the automatic approach checklist and completed all the applicable items with the exception of RAD ALT HOLD ON. We left it off to facilitate a trimmed-up descent. We had briefed the altitude at which it would engage.

The aircrewman told us he had a smoke ready and the HAC nodded in approval. I told the crewman to pop the smoke. When the flare ignited in the water, someone commented, "It sure is bright tonight. Almost as if we are stealing night time."

As we passed through 1,000 feet, I gave an advisory altitude call, checked the wind direction, ensured the altimeter's downward slide had slowed and reviewed the automatic approach checklist. What was wrong with this picture?

We neared the smoke and prepared to mark-on-top. While setting up for the windline rescue pattern, I noticed the radalt needle rapidly passing through 200 feet.

"Altitude!" I yelled and pulled up on the collective. I didn't want to try out our 9D5 training. Fortunately, the engines responded and we avoided becoming another Naval Safety Center statistic.

During the discussion that followed our narrow escape, we discovered that while in our descent from a cooler level, the HAC's ears had clogged at about the same time we had reached our briefed altitude to engage the radalt. As the pilot leveled off and tried to relieve his discomfort using the valsalva maneuver, the aircraft entered an uncommanded descent.

Were we just a crew of knuckleheads whose coordination had broken down? Maybe, but I think there's more to it. As a crew, we had flown together at homeguard, been through pre-cruise workups together, and had half a deployment under our belts. Our comfort level was pegged and with the war over, the complacency monster had come along for the ride. The margin for error when flying around a ship is minimal at best. Throw nighttime into the equation—no matter how bright the moon—and the margin gets even smaller.

We had lost our respect for the night. I don't think that will happen again.

Lt. McClain is an SH-60B pilot with HSL-48.

PH1 D.F. Flynn

It Won't Work if You Don't Turn It On!

By Ltjg. John Davison

After a week of being med down, I finally got scheduled for a hop, bombing smoke at night. I made sure my pilot and I briefed the flight thoroughly because I had heard lots of stories that made me nervous about this type of flying. I especially made sure that there was no question about the dive pattern for our flight of two A-6s. We briefed the altitude for roll-in, the dive angle, pickle altitude, dive-recovery altitude, and radar altimeter setting.

Once I got back into the jet and started going through the familiar routine, I felt more comfortable. In the overhead pattern, waiting for our wingman to join on us, our radar altimeter kept going off for no reason. It does that sometimes. I suggested we turn it off until the descent and the pilot happily agreed.

Finding the bombing area turned out to be a little tricky. A scattered layer at about 3,000 feet had moved into our vicinity and once we dropped our night smoke, we had to strain to find it again. Our efforts were further frustrated because a few of our wingman's lights didn't work and he was hard to see.

Our first FLIR hand-offs went well and the hits seemed to be fairly close. I was doing my best to keep the FLIR on the smoke after release to get a good spot, but the clouds were moving in.

On our third run, we seemed to have a good hole to drop through, but as I was holding the FLIR on the target, I started getting a creepy feeling on the back of my neck. I pulled my head out of the boot just in time to see the two click to a one in the thousands-of-feet dial of the altimeter.

"Pull up!" I screamed. My pilot saw it as soon as I did and there was G on the aircraft before I even opened my mouth. We bottomed out with about 500 feet below us and a big, fat 6.2 G on the accelerometer.

After a minute or two of flying safely at 10,000 feet, my pilot said, "We'd better knock this off. I got much too fixated on that last dive. Besides, the deck is really socked in now."

Why hadn't the radar altimeter sounded? The reason gave me a sinking feeling. We had not done a decent checklist and had never turned it back on. ◄

Ltjg. Davison is an A-6 BN with VA-95.

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